IN THE CLAIMS

1. (Original) A method for controlling clutch engagements comprising the steps of:

(a) monitoring engine output shaft speed;

(b) monitoring transmission input shaft speed;

(c) generating a clutch operational command to open or close a clutch assembly;

(d) determining a first reference point corresponding to a beginning of torque transfer in response to the clutch operational command based on at least data from steps (a) and (b);

(e) determining a second reference point corresponding to a beginning of clutch lockup based on at least data from steps (a) and (b); and

(f) determining a clutch engagement rate based on the first and second reference points.

2. (Original) The method of claim 1 further including the steps of storing the first and second reference points in long-term memory, updating the first and second reference points over time to provide corrected first and second reference points, and adjusting the clutch engagement rate based on the corrected first and second reference points.

3. (Original) The method of claim 1 further including the step of updating the first and second reference points over time in response to clutch component wear.

4. (Original) The method of claim 1 further including the step of updating the first and second reference points in response to a service event.

5. (Original) The method of claim 1 further including the step of determining the first and second reference points in terms of engine revolutions per minute.

6. (Original) The method of claim 1 further including the step of performing a plausibility check to verify at least one of the first reference point, second reference point, or clutch engagement rate.

7. (Original) The method of claim 6 including the step of generating a warning signal if the plausibility check fails.

8. (Original) The method of claim 6 including the step of modifying the clutch engagement rate if the first reference point, second reference point, or clutch engagement rate is not plausible.

9. (Original) The method of claim 1 wherein step (f) further includes optimizing clutch engagement response by approaching engagement and disengagement points at a first rate of speed.

10. (Original) The method of claim 9 wherein step (f) further includes optimizing clutch operating comfort and clutch performance by changing to a second rate of speed different than the first rate of speed once the clutch assembly is operating in a desired region.

11. (Original) The method of claim 10 wherein the first rate of speed comprises a higher rate of speed than the second rate of speed.

12. (Original) The method of claim 1 including the steps of determining drive-off torque and determining associated drive-off torque increase rate for a desired vehicle acceleration prior to initiating a drive-off maneuver.

13. (Original) The method of claim 12 determining the drive-off torque and drive-off torque increase rate based on at least one of vehicle weight, drive-off gear ratio, or drive-off gradient.

14. (Original) The method of claim 12 further including the step of modifying the clutch engagement rate based on at least one of the drive-off torque and drive-off torque increase rate.

15. (Original) The method of claim 1 further including the steps of monitoring and storing the first and second reference points over time to generate a clutch history, and predicting a useful clutch life based on the clutch history.

16. (Original) The method of claim 15 including the steps of generating periodic clutch status signals to advise a vehicle operator that service is required.